

REMARKS

In accordance with the foregoing, claim 13 has been cancelled and claims 1, 12, 14, 15 and 17 have been amended. Claims 1 through 12 and 14 through 24 are pending and under consideration.

The examiner objects to claims 13 thru 15, asserting that they are substantial duplicates of claims 22 through 24. Applicant respectfully disagrees. Claims 13 through 15 depended on independent claim 12. Claim 12 recites that the grooves extend over two or more pixel sites. Thus, each of claims 13 through 15 included this limitation. On the other hand, claims 23 and 24 depend on independent claim 22. None of claims 22 through 24 recite that the grooves extend over two or more pixel sites. At least for this reason, claims 22 through 24 are different from claims 13 through 15, and the objection should be withdrawn.

Claim 1 is rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,520,819 to Sakaguchi in view of Japanese Patent Publication no. JP 2000-323276 to Shunichi et al. Claim 17 is separately rejected as being obvious over Shunichi et al in view of Sakaguchi. Although the rejections are phrased somewhat differently, with a different assertions of obviousness, they will be addressed together.

The examiner relies upon Sakaguchi for an insulating film with a groove extending over two or more pixel sites. This groove is shown, for example, in Fig. 9 of the reference. One purpose of the groove of the present invention is to allow two or more pixel sites to be filled in a single operation. Independent claims 1 and 17 have been amended to clarify this feature. Sakaguchi does not form grooves for this purpose. Column 8, lines 8 through 41 of Sakaguchi describes a masking process used for the reference. This portion of the reference states,

As is shown in FIG. 3G, the red emission layers 120, the electron transport layers (ETL) 13 and the cathode electrodes 14 are formed in the named order. Then, the shadow mask 18 is shifted one sub-pixel (one color), and the green emission layers 121, the electron transport layers (ETL) 13 and the cathode electrodes 14 are deposited in the named order. Finally, the mask is again shifted one sub-pixel, and the blue emission layers 122, the electron transport layers (ETL) 13 and the cathode electrodes 14 are deposited in the named order. The emission layer 12 and the electron transport layer 13 are formed by using the above described three-color materials.

* * *

According to this method, when compared with the conventional method for which a sliding mask is used for vacuum deposition, the distance between the shadow mask 18 and the substrate 1 is constant, so that the occurrence of such physical pixel defects as scratches, which are caused by the mask contacting the substrate, can be reduced. Furthermore, since the possibility of short-circuiting between the respective pixels and the extension of a material to the undesirable area caused by the distortion or the positional shifting of a mask can be suppressed, neither the color shifting nor the positional shifting occurs, and a panel having sharp edges can be produced.

Sakaguchi forms grooves extending over two or more pixel sites and then uses a sliding mask technique to fill the grooves. However, Sakaguchi does not fill two or more pixel sites in a single operation.

In Sakaguchi, a host and dopant emission layer is described from column 4, line 61 through column 5, line 15. The examiner has cited Shunichi et al for an organic element dissolved in a solution. Shunichi et al discloses an ink jet printing method in which a luminescent material is in solution. According to Shunichi et al., the pixels are filled one-by-one using the ink jet method. Clearly, this is different from filing two or more pixel sites in a single operation.

Perhaps if one having ordinary skill in the art would have combined Sakaguchi with Shunichi et al, the combination would have grooves extending over two more pixel sites, which grooves are filled using an ink jet method. The claims do not read on this combination. Specifically, the combination does not have two or more pixel sites being filled in a single operation. For at least this reason, the obviousness rejection should be withdrawn.

With regard to rejected claims 12 and 16, claim 16 depends on claim 12. The examiner indicates that dependent claim 13 contains allowable subject matter. Dependent claim 13 has been incorporated into claim 12. Accordingly, it is submitted that claims 12 and 16 now contain allowable subject matter. The rejection of these claims should be withdrawn.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge

the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: Mark J. Henry
Mark J. Henry
Registration No. 36,162

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501